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Newsletter

December 2016 Issue 1

Editorial

Dear reader,

ALLIANCE is a three year research project, supported by the EU HORIZON 2020 Programme, aiming at developing advanced research and higher education institution in the field of transport in Latvia, by linking the Transport and Telecommunication Institute with two internationally recognized research entities – University of Thessaly, Greece and Fraunhofer Institute for Factory Operation and Automation, Germany.

We are delighted to present the 1st ALLIANCE newsletter, which is produced to inform you and keep you up to date with the project's activities!

This first issue will guide you through the scope, concept and expected impacts of the project, and will update you on the activities of the first year and the latest news on the forthcoming events. You will also read four very interesting interviews from experts in the specific domain of research and practice.

We hope that you find this newsletter informative and enjoyable to read, and we encourage you to visit our website at:

www.alliance-project.eu

Prof. Irina Yatskiv (Jackiva)
Project Coordinator

Prof. Eftihia Nathanail
Dissemination Manager

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 692426

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Enhancing excellence and innovation capacity in sustainable transport interchanges

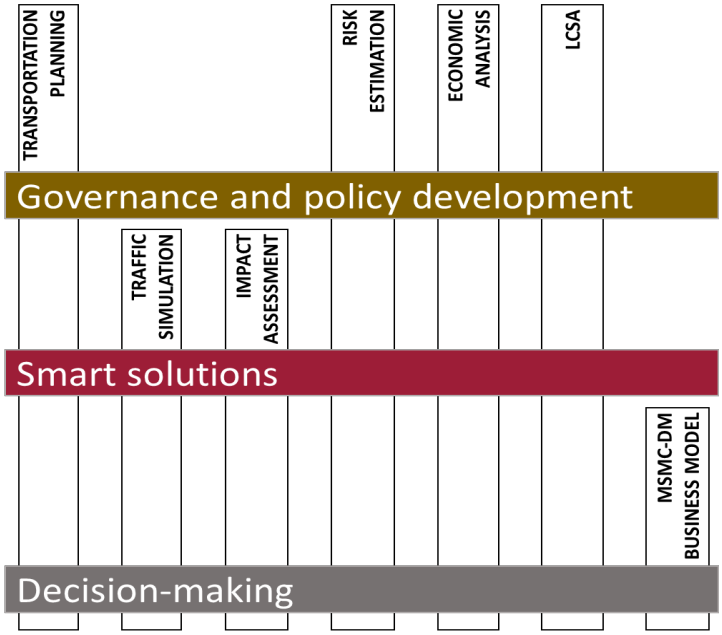
Introducing ALLIANCE

Scope

- Link Transport and Telecommunication Institute (TTI) with University of Thessaly (UTH) and Fraunhofer Institute for Factory Operation and Automation (Fraunhofer)
- Provide knowledge to TTI research staff in the field of smart interconnecting sustainable transport networks
- Facilitate stakeholder collaboration and develop strong linkage among education, research and industry
- Create a doctoral programme in Transport Economics and Management at TTI

Concept

- Needs' analysis of Latvia and the surrounding region of the Baltic sea (Lithuania, Estonia, Poland) on intermodal transportation terminals
- Consideration of the relations among policy makers, industry and education/research
- Development of a coherent educational/training program, structured around 3 pillars:
  - ✓ Organizational/governance
  - ✓ Operational/services
  - ✓ Service quality/customer satisfaction



Program's thematic areas

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Expected impacts

- New bases in knowledge transfer procedures, education and interdepartmental collaboration amongst research institutes
- Innovative organizational framework with tangible and well-estimated progress results
- Integrated framework addressing knowledge transfer techniques and the upgrading of the educational system, through networking, staff exchange and webinars

TTI is expected to benefit from ALLIANCE by

- Improving its knowledge in methodologies for preparing, writing and publishing scientific papers
- Strengthening its research capacity
- Establishing international research teams in specific areas of interest
- Generating new innovative ideas for future research work through the project's activities
- Setting up the fundamentals for the young generation of researchers
- Being integrated in a number of existing international transportation research networks
- Being incorporated in the European research system of transport and logistics

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ALLIANCE events

Training Program "Urban and transportation planning"

24-27 May 2016 Volos, Greece

The training program "Urban and transportation planning" was successfully organized by UTH's Interdepartmental Postgraduate Program "Management, Transportation and Planning" and the 3rd Conference on Sustainable Urban Mobility (3rd CSUM) in Volos, Greece on 24-27 May, 2016. In total, 28 students, 8 from Latvia and 20 from Greece participated.

The training program, being part of ALLIANCE's dedicated knowledge-sharing activities, lasted 4 days, the first 2 of which were realized at the premises of the School of Engineering of UTH, and concerned a number of selected courses of UTH's postgraduate program, while two more lectures were given by Fraunhofer experts.

The last two days of the program, students attended selected sessions of the 3rd CSUM:

- Green transportation
- Special Session "City logistics in an era of change"
- Transportation interchanges
- Activity-based transport modeling
- Public transport and demand responsive systems I and II
- Safety and security II
- Accessibility analysis

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ALLIANCE events

ALLIANCE organized a "Train-the-Trainers" Seminar and a "Young Researchers" Seminar in Riga, Latvia on 19-21 October, 2016, during the 16th International Conference on Reliability and Statistics in Transportation and Communication (RelStat'16).

Train-the-Trainers Seminar

During the Seminar, the 12 courses of the ALLIANCE's "Sustainable Transport Interchange Program" were presented in summary by the responsible Institutes, in order to disclose the syllabus of the Program. In addition, attendees provided feedback for amending the courses and discussed with presenters potential challenges that might be faced during the 1st ALLIANCE Summer School in Latvia in July 2017.

Young Researchers' Seminar

During this Seminar, 9 presentations were given by young researchers from Germany, Greece and Latvia. The topics of the presentations covered: transport modeling, logistics and evaluation of transport systems. Following the Seminar, a roundtable was organized with attendees representing TTI, UTH and Fraunhofer to discuss future scientific collaborations among the Institutes.

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Save the date 17-23 July 2017

ALLIANCE organizes the 1st Summer School, entitled "Sustainable Transport Interchange Program – STIP" in Riga, Latvia on 17-23 July, 2017.

An open call for participation will be soon released!

STIP courses

Code	Course	Code	Course
C0	Research methodology and teamwork setup	C7	Information systems for intermodal freight transportation
C1	The European policy on intermodal transportation	C8	Design of passenger transport interchanges
C2	Building business models for intermodal transport interchanges	C9	Design of freight transport interchanges
C3	Sustainable development and transportation planning	C10	Smart technologies for efficient logistics
C4	Operation and management of intermodal transport systems	C11	Decision making methodologies
C5	Optimization of intermodal transport systems	C12a	Data collection methods: Surveys
C6	Intelligent services for passenger transportation	C12b	Data collection methods: Historical and observed data

Preliminary course schedule

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:00	C1 - UTH	C4 - UTH	C8 - UTH	C11 - UTH	C6 - Fraunhofer
10:00-11:00	C2 - Fraunhofer				
11:00-12:00					C7 - Fraunhofer
12:00-13:00	C3 - UTH	C5 -UTH	C9 - UTH	C12a,b - Fraunhofer /UTH	
13:00-14:00					C10 - Fraunhofer
14:00-15:00					
15:00-16:00	C0	Project time	Project time	Project time	Project time
16:00-17:00	Project time				
17:00-18:00					

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Future events and activities

Transportation Research Board 96th Annual Meeting, Washington D.C., USA

Presentation of the paper "Developing an educational program for transportation across regions: The case for intermodal connections for Latvia and the region", prepared by UTH and TTI.

JANUARY 2017

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE 2017

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

10th International Logistics Doctoral Student Workshop in Magdeburg, Germany, during the 20th IFF Science Days.

ALLIANCE Special Session and Trainers' Seminar in Riga, Latvia, during the 17th International Conference on Reliability and Statistics in Transportation and Communication (RelStat'17).

OCTOBER 2017

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Interview

with **Prof. Andrés Monzón**
Director of TRANSyT-UPM Transport Research Centre-Universidad Politecnica de Madrid
Madrid, Spain

What are the challenges that are faced for creating an integrated intermodal transport system for passenger or freight transport, depending on your expertise, at EU level?

In the case of **passenger**, the main challenge is to **integrate** all levels of management of the different transport modes. They are normally operated and planned by different operators and transport authorities. Therefore there is a need of a 3 levels of integration:

- **Administrative integration**: one singe authority to coordinate the operation of all modes, including public transport, but also taxis, bikes and walking movements.
- **Fare and ticketing integration**: one single transport-card for all services, including other complementary as parking services. For ticketing the best solution is portals to sell tickets for all operators and services. Also, this should be the case of the ticket office at stations: one single one selling and providing information about all services whoever is the provider.
- **Information and physical integration:** that means to place stops together, reducing transfer time and penalties. This should include also information protocols. Integrated information of all modes should be integrated in the same platform. Long distance services should provide last mile services in the urban last stage of the trip.

In the case of **freight,** things are much simpler. Usually, decision makers are private companies serving to their own priorities which do not pass through the integration of services with the competitors. In that case, the role of the city authorities could be to provide a common platform to operate and to minimize harmful effects: congestion, accidents, noise, pollution, etc.

In some cases, city authorities could organize concessionaire schemes for last-mile deliveries offered to all long distance haulage companies.

Normally shippers are already multimodal because they look for the best allocation of resources and costs among carriers.

What are the biggest barriers when trying to implement different smart mobility measures in transport terminals? How may these be overcome?

The initial barrier is administrative because competences are quite fragmented. There is a need of transferring competencies to a single body to coordinate all services: public transport, bicycles, taxis, parking, etc.

The same could be said about terminals. They need a terminal coordinator with authority to make both long term strategic and daily decisions to integrate all services. His responsibility should include transport modes, services and facilities, security, space organization and information, and wayfinding protocols.

Situations with a dominant mode should be avoided. For example, rail stations operate as passenger terminals offering access to bus services, parking, bikes, etc. If the rail manager –rail operator or station manager- takes the coordinative responsibility, that does not fulfil his role. It is necessary the coordinator to be somebody independent and above all operators located in the terminal.

At the same time, transport terminals present good opportunities to test MaaS (mobility as a service) schemes.

In the case of freight there is still much to do to have integrated facilities in all cities. There is a lack of integration and cities should develop clear rules for making mandatory use of common spaces and facilities to reduce costs, improve efficiency and reduce externalities.

How is ALLIANCE project expected to contribute to smart interconnecting sustainable transport networks in Latvia and the region, and at what level may this be achieved?

The ALLIANCE project could contribute to integrated solutions by motivating transport and city authorities. To facilitate this target it could present good practices in other cities in a benchmarking exercise.

The second goal could be to perform a transferability exercise. It could consist of selecting good practices in some cities and to identify conditions and similarities as to be transferred to cities in Latvia. Normally problems are very similar and therefore solutions too. City planners and municipal officers could learn more from the experiences deployed in brother cities. This twinning exercise could provide better understanding of solutions and enrich links among cities when they are implementing the same type of solutions.

Interview

with Hon. -Prof. Klaus Richter
Institute of Logistics and Material Handling System
Otto von Guericke University Magdeburg
Magdeburg, Germany

What are the challenges that are faced for creating an integrated intermodal transport system for passenger or freight transport, depending on your expertise, at EU level?

Logistics depends on *full* connectivity in communication by means of cellular, satellite and LPWAN (Low Power Wide Area Network) technologies beyond the entire global supply chain with its multitude of independent actors in the logistical value chain down to manufacturers' assembly lines or private consumers in a rural area. Logistics companies' demands on this kind of connectivity, include low capital expenditures for mobile objects, small quantities of data, low energy consumption and longevity, availability of communication even in buildings, and low communication costs (< €1/year) per piece of cargo or shipping equipment. The large number of wireless nodes required, makes the business models highly interesting for the telecommunications industry.

What are the biggest barriers when trying to implement different smart mobility measures in transport terminals? How may these be overcome?

In terms of documenting freight movements and security status, severely fragmented information systems and format changes continue to typify the logistics sector whenever risk is transferred.

Internationality: Cargo items and shipping equipment travel internationally and require integrated connectivity beyond regions and borders. Full connectivity also means connectivity on the means of transportation, whether that be an airplane or a ship. Customs agencies and security agencies have to be enabled to access information easily. Regulations must enable non-discriminatory roaming among different network providers.

Flexibility: Communication networks and services have to be dynamically adaptable (network slicing) in keeping with the brevity of contract logistics and also provide services for internal supply chains down to assembly lines in factory buildings in keeping with demands.

Mobility: It is extremely important for logistics to receive as needed the location of mobile objects with which there is communication.

Confidence building: International logistics in telecommunications also means observing international regulations on public security throughout the entire transport chain.

How is ALLIANCE project expected to contribute to smart interconnecting sustainable transport networks in Latvia and the region, and at what level may this be achieved?

The international make-up and expertise of the organizations working in telecommunications give them the opportunity to facilitate the process of implementing "seamless connectivity for logistics" as partners in the ALLIANCE project in which logisticians, research organizations, universities and government agencies are collaborating on the work.

Interview

with Dr. Roberto Palacin
Senior Research Associate
Responsible for Rail Systems Group at NewRail-
Centre for Railway Research
Newcastle University
Newcastle upon Tyne, United Kingdom

What are the challenges that are faced for creating an integrated intermodal transport system for passenger or freight transport, depending on your expertise, at EU level?

While representative bodies of the different transport modes have been actively working towards an integrated European transport system, challenges still remain. Overall, and looking ahead in time, digitalisation and the harmonisation process that is required to achieve it (e.g. data protocols, revenue distribution) is one of the major challenges being faced. This process has ramifications affecting not only the passenger journey (e.g. travel companion), but also the performance of the individual modes as well as the transport system as a whole (e.g. real-time information flow, capacity issues, energy conservation, preventive maintenance). Initiatives such as the European project SETRIS (Strengthening European Transport Research and Innovation Strategies, grant agreement No 653739) are bringing together for the first time all five European Technology platforms (ETPs) representing road, rail, aviation, maritime and freight seeking the identification of synergies to address the realization of a truly integrated European transport system.

What are the biggest barriers when trying to implement different smart mobility measures in transport terminals? How may these be overcome?

The biggest barriers affecting the implementation of smart mobility in transport nodes can be broadly distinguished into two categories i) physical and ii) operational. This is particularly relevant in the urban environment. Physical barriers affecting smart mobility are concerned with the challenges posed by attempting to integrate in a single terminal several mobility options (e.g. metro, bus, tram, taxi) all of which have different requirements. Operational aspects of different modes can become major barriers for the fully implementation of smart mobility plans as these require a level of integration (e.g. timetable) that currently is not common. This is also related to the digitalisation process and its implementation steps (see question 1).

How is ALLIANCE project expected to contribute to smart interconnecting sustainable transport networks in Latvia and the region, and at what level may this be achieved?

A key contribution of the ALLIANCE project could be the identification of the main focus areas to boost the role of Latvia as an integrator of the long distance passenger and particular freight traffic in the Baltic region. Specifically, promoting the region as a focal point for specialised education could be seen as a first essential step towards addressing the key challenges identified above (Q1/Q2) e.g. automation and digitalisation. This would require the development of novel, specialised multidisciplinary research and educational training programmes recognising the systems dimension of smart interconnecting sustainable transport networks.

Interview

with **Dr. Paulus Aditjandra**
Research Associate
NewRail-Newcastle Centre for Railway Research
Newcastle University
Newcastle upon Tyne,
United Kingdom

What are the challenges that are faced for creating an integrated intermodal transport system for passenger or freight transport, depending on your expertise, at EU level?

According to the latest report "Transport Advisory Group", published in 2014 and endorsed by the European Commission - which has included much of the report's content in its H2020 proposal call - there are three types of integration that are needed. First is the **sustainability** context, embracing social, environmental and economic issues; secondly we must integrate **physical transportation:** modes, traffic, spatial scales, infrastructure and services; and the third type is **sectoral** integration, across business sectors (e.g. energy ICT, materials, manufacturing, retailing, and provision of public services). Since the 2001 EU Transport White Paper, "intermodality" has become the adopted term to describe a transport system that allows at least two different modes to be used, in an integrated manner, in a "door-to-door" transport chain. Intermodality is commonly used alongside interoperability (i.e. standardised and compatible infrastructure technology, facilities, equipment and vehicle dimensions) and interconnectivity (i.e. horizontal coordination and synchronicity between modes) to characterise the integrated transport system. Among the many key challenges identified, I believe that urban nexus problems (congestion, pollution, accidents and inaccessibility); climate change (e.g. GHG, noise); and demographic trends (aging) are the most significant we face, when aiming to achieve these envisaged transport services.

What are the biggest barriers when trying to implement different smart mobility measures in transport terminals? How may these be overcome?

There are several types of transport terminal hub, from the urban down to neighbourhood level – all of which can be associated with a variety of smart mobility measures. When it comes to electric vehicles (EV), the challenge for both passenger and freight is still about the market uptake. The cost of an EV is still more expensive than its equivalent combustion engine powered car, so the customer's freedom of choice is very much driven by socio-economic characteristics.

For freight, similar problems exist, with even more issues related to the various logistics types needed to deliver the service (e.g. capacity, speed, reliability). To overcome these barriers, it may be appropriate for central government to intervene to accelerate the market uptake, for instance by providing incentives to first time users of EVs, while providing a supply of EV at the hubs and even located among domestic houses. This practice has been evident in many north-west European countries, including UK and Norway.

Smart mobility with regards to active travel (walking, cycling and public transport use) is limited by the built environment characteristics that promote active travel. Generally, people's travel behaviour is mainly determined by socio-economic status (e.g. job, household characteristics, car ownership) but we have also begun to understand that the way neighbourhood and cities are being built can and does influence the way its residents travel within it. For example, the building of Los Angles, USA, expected everyone to drive their car everywhere but, if we consider current-day London, with its walking, cycling and public transport friendly built environment, both residents and visitors appreciate the 'freedom of accessibility' they have grown to expect. If this approach is applied in hubs, at all levels, there is no doubt that we can turn smart mobility into sustainable mobility.

For freight at the hub level, the challenge is in so-called "last mile" delivery, where goods must arrive on demand and adapt to the changing face of the physical infrastructure of cities and neighbourhoods as hubs - now less accessible by freight vehicles that were designed without the smart mobility concept in mind. New freight vehicle designs, the use of rail freight to connect with last mile delivery EVs, and the adoption of city logistics measures - along with coherent urban freight strategies at organisational up to international level – will all help shape the future sustainable freight system that is well integrated with hubs. This is pretty much in line with the idea of the TEN-T core network, of the transport system promoted by the EU government.

How is ALLIANCE project expected to contribute to smart interconnecting sustainable transport networks in Latvia and the region, and at what level may this be achieved?

The first aim of the ALLIANCE project, with its partnership of academic institutions, will be to contribute to the development of training for transport professionals, who can then contribute to addressing the challenges identified above. The project's second approach is through research, to identify the gaps in, and find solutions for, local and regional transport problems. I am not personally directly familiar with Latvia and the specific transport problems of that region, but I believe that expertise lies within the ALLIANCE consortium and that it will be able to address that region, as a priority. One thing for sure is that we must ensure the smooth realisation and implementation of the TEN-T Core Network policy, promoted at EU level, in order that it can become the backbone of sustainable, integrated, EU transport systems.

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Consortium

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UNIVERSITY OF THESSALY, TRAFFIC TRANSPORTATION & LOGISTICS LABORATORY (UTH-TTLog)	Greece
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TSI TRANSPORTA UN SAKARU INSTITŪTS

UNIVERSITY of THESSALY

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